THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 8

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte SHUI-JEN R. HSU and CHIA-TIEN CHEN

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Appeal No. 96-0607
Application No. 08/134,778[1]

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ON BRIEF

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Before PAK, WARREN and WALTZ, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 8 through 16 and 24 through 32, which are all of the claims remaining in this application.

[1] Application for patent filed October 12, 1993.

According to appellants, the invention relates to a corrosion resistant latex composition comprising an emulsion in water of a core/shell polymer prepared by free radical emulsion polymerization techniques wherein one of the monomers used in the production of the polymer comprises a salt of 2-acrylamido-2-methylpropane sulfonic acid[2] and wherein the free radical polymerization is conducted in the presence of a diphenyl sulfonate surfactant (brief, page 2). Appellants' latex composition is useful as a "waterborne coating binder" in paints (specification, pages 2-3).

Appellants state that claims 14, 16, 30, and 32 "have issues which support separate patentability" (brief, page 2). We presume that appellants mean that claims 8-13, 15, 24-29 and 31 are considered to be one group while claims 14, 16, 30 and 32 are considered as the second group, with the claims of each group standing or falling together. Appellants present specific, substantive reasons for the separate patentability

[2] The monomer "2-acrylamido-2-methylpropane sulfonic acid" is hereafter referred to by its acronym "AMPS". See the specification, page 2, last paragraph.

of claims 14, 16, 30 and 32 on page 7 of the brief.[3] See 37 CFR § 1.192(c)(5) and (6)(1993). Accordingly, we will address each group of claims separately. Claim 8 is illustrative of the subject matter on appeal and is reproduced below:

8. A corrosion resistant latex composition comprising an emulsion in water of a core/shell polymer prepared by free radical emulsion polymerization techniques wherein one of the monomers utilized in the production of the polymer comprises a salt of 2-acrylamido-2-methylpropane sulfonic acid and wherein the free radical polymerization is conducted in the presence of a diphenyl sulfonate surfactant.

The examiner has relied upon the following references as evidence of obviousness:

Daniel et al. (Daniel)	4,217,260	Aug. 12, 1980
Roncari	4,226,747	Oct. 7, 1980
Smith (Smith '224)	4,485,224	Nov. 27, 1984
Smith (Smith '359)	4,617,359	Oct. 14, 1986
Barnett et al. (Barnett)	4,812,510	Mar. 14, 1989
Moradi-Araghi et al. (Moradi-Araghi)	5,100,931	Mar. 31, 1992

[3] In paragraph 11 on page 2 of the answer, the examiner notes that appellants state that the claims do not stand or fall together but "fails to present reasons in support thereof". However, the examiner addresses the subject matter of claims 14, 16, 30 and 32 on pages 4-5 of the answer.

Bowman et al. (Bowman)	5,244,728	Sep. 14, 1993
Chmelir	5,264,471	Nov. 23, 1993
		(Filed Sep. 17, 1991)

Claims 8 through 16 and 24 through 32 stand rejected under 35 U.S.C. § 103 as unpatentable over Daniel or Roncari in view of Barnett or Bowman further in view of Chmelir and even further in view of Smith ‘359, Smith ‘224 or Moradi-Araghi (answer, paragraph bridging pages 3-4). We *affirm* the examiner’s rejection of claims 8-13, 15, 24-29 and 31 but *reverse* the examiner’s rejection of claims 14, 16, 30 and 32 for reasons which follow.

OPINION

As noted above, we consider claims 8-13, 15, 24-29 and 31 as one group. Accordingly, we select claim 8 as the single claim from the group and decide this appeal as to the ground of rejection on the basis of this claim alone. See 37 CFR § 1.192(c)(5)(1993).

The corrosion resistant latex composition of appealed claim 8 comprises a core/shell polymer in an aqueous emulsion where one of the monomers used in the production of the

polymer by free radical emulsion polymerization techniques is an AMPS salt and the free radical process is conducted in the presence of a diphenyl sulfonate surfactant, preferably an alkylated diphenyloxide disulfonate (see appealed claim 8 and the specification, page 3, last paragraph).

Daniel discloses a core/peripheral layer (i.e., shell) latex wherein the core polymer is produced by the free radical emulsion polymerization of at least one "co-polymerisable unsaturated alkaline organo sulphonate" such as sodium 2-acrylamido,
2-methylpropane sulphonate (column 1, line 67-column 2, line 21; column 2, line 66-column 3, line 8; column 3, lines 23-29; and the answer, page 4). The conventional emulsion polymerization is conducted in the presence of an emusifying agent such as an alkyl-aryl sulphonate (column 3, lines 36-38 and 48-50). Daniel desires to improve the stability of the latex emulsion product (column 1, lines 44-66; column 5, lines 34-38) for its use as a binder in the paint industry (column 5, lines 62-66).

Barnett is directed to vinyl acetate latex compositions useful as binders in the manufacture of paints and for

increasing latex and paint stability (abstract; column 4, lines 5-8 and 43-60). Barnett teaches that, by conducting the emulsion polymerization in the presence of an anionic surfactant and an ionic monomer, the particle size of the latex can be modified to yield small particle size latex which improves the stability of the latex emulsion (column 2, line 61-column 3, line 2; column 4, lines 5-8 and 20-37). The anionic surfactant includes alkyl benzene sulfonate or alkyl diphenyloxide disulfonate (column 3, lines 40-41; see the answer, page 4). The ionic comonomer includes the sodium salt of AMPS[4] and Barnett teaches this comonomer as the most preferred (column 3, lines 54-64; column 8, lines 14-16, lines 38-40; claim 11). Barnett teaches that the concepts of this invention are applicable to emulsion polymerization of vinyl acetate and other monomers capable of ethylene addition polymerization (column 3, lines 3-10).

[4] Appellants' "sodium salt of 2-acrylamido-2-methylpropane sulfonic acid" and the "sodium acrylamido-2-methylpropane sulfonate" of Daniel and Barnett are apparently different ways of naming the same comonomer.

"It is well-established that before a conclusion of obviousness may be made based on a combination of references, there must have been a reason, suggestion, or motivation to lead an inventor to combine those references." *Pro-Mold and Tool Co. v. Great Lakes Plastics Inc.,* 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629 (Fed. Cir. 1996). Daniel and Barnett are both directed to latex binders useful in paints with the objective of improving the stability of the latex composition. Although Barnett does not disclose core/shell polymers, Barnett does disclose and teach the applicability of his concept to vinyl acetate polymers and Daniel discloses that his core polymer includes vinyl acetate (column 2, line 26). Accordingly, the teaching of Barnett that anionic surfactants with ionic monomers produce very stable vinyl acetate latexes would have suggested to one of ordinary skill in the art to use the anionic surfactants of Barnett in the emulsion polymerization of Daniel involving AMPS to improve the stability of the core polymer (see the answer, page 5). Furthermore, Barnett teaches the relative equivalence of alkyl benzene sulfonate and alkyl diphenyloxide disulfonate as

anionic surfactants (column 3, lines 40-41) and thus would have suggested to the artisan the use of diphenyloxide disulfonate[5] in place of the alkyl-aryl sulfonate emulsifier in the emulsion polymerization of Daniel involving the AMPS comonomer (column 3, lines 45-50). Accordingly, we conclude that the subject matter of appealed claim 8 would have been *prima facie* obvious based on the disclosure and teachings of Daniel and Barnett.[6]

Appellants argue that Daniels alone does not suggest the combination of a salt of AMPS and a diphenyl sulfonate surfactant (brief, paragraph bridging pages 3-4). Appellants further argue that Barnett does not disclose any core/shell

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[5] It should be noted that a reference of record, not applied by the examiner, suggests improved stability for latex systems produced by emulsion polymerization when using the DOWFAX surfactant (an alkyl diphenyloxide disulfonate compound). See Dow, "Increasing mechanical stability and reactor yields with DOWFAX anionic surfactants for emulsion polymerization applications", pp. 1-12, Dec. 1986.

[6] The examiner has relied upon Chmelir, Smith '224 and '359, and Moradi-Araghi to show the relative equivalence of sodium and ammonium salts of AMPS in the art (answer, pages 4-5; brief, pages 6-7). These references are discussed below with respect to the claims on appeal limited to the ammonium salt of AMPS. A discussion of the Roncari and Bowman references is not necessary to reach our decision.

polymers and does not relate to corrosion-resistant paints (brief, page 5). Appellants' arguments are not well taken since, as discussed above, Barnett discloses the same use as Daniel (latex binders for paints). Barnett and Daniel need not relate to the same use as disclosed by appellants[7] to be properly combined in a rejection under § 103. *In re Kemps,* 97 F.3d 1427, 1430,
40 USPQ2d 1309, 1311 (Fed. Cir. 1996)(The motivation in the prior art to combine the references does not have to be identical to that of the applicant to establish obviousness). Furthermore, the artisan would have recognized that the teachings of Barnett, although not specifically directed to core/shell polymers, would be applicable to similar core or shell polymers *per se*.

For the foregoing reasons, we conclude that the subject matter of appealed claim 8, and the claims that stand or fall

[7] Appellants disclose that the present invention comprises the utilization of two particular ingredients (a salt of AMPS and a diphenyl sulfonate surfactant) in the preparation of a waterborne coating binder (specification, page 2, penultimate paragraph). This appears to be the same use as disclosed by Daniel and Barnett, even though appellants may ultimately use the binder in a different type of paint (a corrosion-resistant paint).

with claim 8, would have been *prima facie* obvious based on the disclosure and teachings of Daniel and Barnett. We note that appellants have not presented any objective evidence of nonobviousness, on this record, which would serve to rebut the *prima facie* case. Considering the totality of the record, including appellants' arguments, we conclude that the preponderance of evidence weighs in favor of obviousness within the meaning of § 103. *In re Oetiker,* 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Accordingly, the rejection of claims 8-13, 15, 24-29 and 31 under 35 U.S.C. § 103 as unpatentable over Daniel or Roncari in view of Barnett or Bowman further in view of Chmelir, Smith '224, Smith '359, and Moradi-Araghi is affirmed.

Appealed claims 14, 16, 30 and 32 all contain the limitation that the ammonium salt of AMPS is used to prepare the latex composition. As discussed above, Daniel and Barnett disclose and teach the sodium salt of AMPS to prepare latex compositions. The examiner applies the Chmelir, Smith '224, Smith '359, and Moradi-Araghi references to show the art-

recognized equivalence of sodium and ammonium salts of AMPS (answer, pages 4-5, brief, pages 6-7).

"When relying on numerous references or a modification of the prior art, it is incumbent upon the examiner to identify some suggestion to combine the references or make the modification." *In re Mayne,* 104 F.3d 1339, 1342, 41 USPQ2d 1451, 1454 (Fed. Cir. 1997). Here we find that the examiner has failed to identify some suggestion, and we can find none, to combine these references with Daniel and Barnett. As explained by appellants on page 6 of the brief, Chmelir relates to water absorbers and Smith '224, Smith '359, and Moradi-Araghi all relate to enhanced oil recovery viscosifiers. The examiner is correct that all of these references show the relative equivalence of alkali metal and ammonium salts of AMPS. However, the examiner fails to identify why this teaching in the arts disclosed by these references would have led one to make this modification in latex binders in the paint industry as disclosed by Daniel and

Barnett.[8] Accordingly, we cannot sustain the examiner's rejection of claims 14, 16, 30 and 32.

SUMMARY

The rejection of claims 8-13, 15, 24-29 and 31 under 35 U.S.C. § 103 as unpatentable over Daniel or Roncari in view of Barnett or Bowman further in view of Chmelir, Smith '224, Smith '359, or Moradi-Araghi is affirmed. The rejection of claims 14, 16, 30 and 32 under 35 U.S.C. § 103 over these same references is reversed. Accordingly, the examiner's decision to reject the appealed claims is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

CHUNG K. PAK)
Administrative Patent Judge)
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[8] Similarly, there is no suggestion in the record for combining the teachings of Chmelir, Smith '224, Smith '359, and Moradi-Araghi with Roncari (a carrier for immunological reagents) or Bowman (a coating for photographic paper).

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	) BOARD OF PATENT
CHARLES F. WARREN	) APPEALS
Administrative Patent Judge	) AND
	) INTERFERENCES
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THOMAS A. WALTZ	)
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